

The background features a light blue gradient with a central pattern of concentric circles. On the left and right sides, there are stylized circuit board traces in a darker blue color, with small circles at the end of the lines, suggesting a digital or technological theme.

# FINTECH PANEL

KENTUCKY DEPARTMENT OF FINANCIAL INSTITUTIONS

# DISCLAIMER

- The opinions expressed are the panelists' and do not necessarily reflect the position or perspective of the Department of Financial Institutions (DFI) or the Commonwealth.
- We do not endorse any of the fintech companies or products referenced in this presentation.

# INTRODUCTION

- Your Moderator:
  - Kelly May, Public Information Officer
- Your Panelists:
  - Brad Johnson, District Manager (Depository)
  - Chad Harlan, Branch Manager (Nondepository/Securities)
  - Anthony McKinney, Examiner (Securities)

# WHAT IS DFI?

- Department of Financial Institutions = state regulator
- Depository Institutions Division = state-chartered **banks and credit unions**
- Nondepository Institutions Division = **lenders** and wire transfer companies
- Securities Division = **investment** professionals and products

# WHAT DOES DFI DO?

- License and register firms and individuals
- Conduct examinations
- Investigate complaints or potential fraud
- Provide educational materials for consumers

# WHY FINTECH?

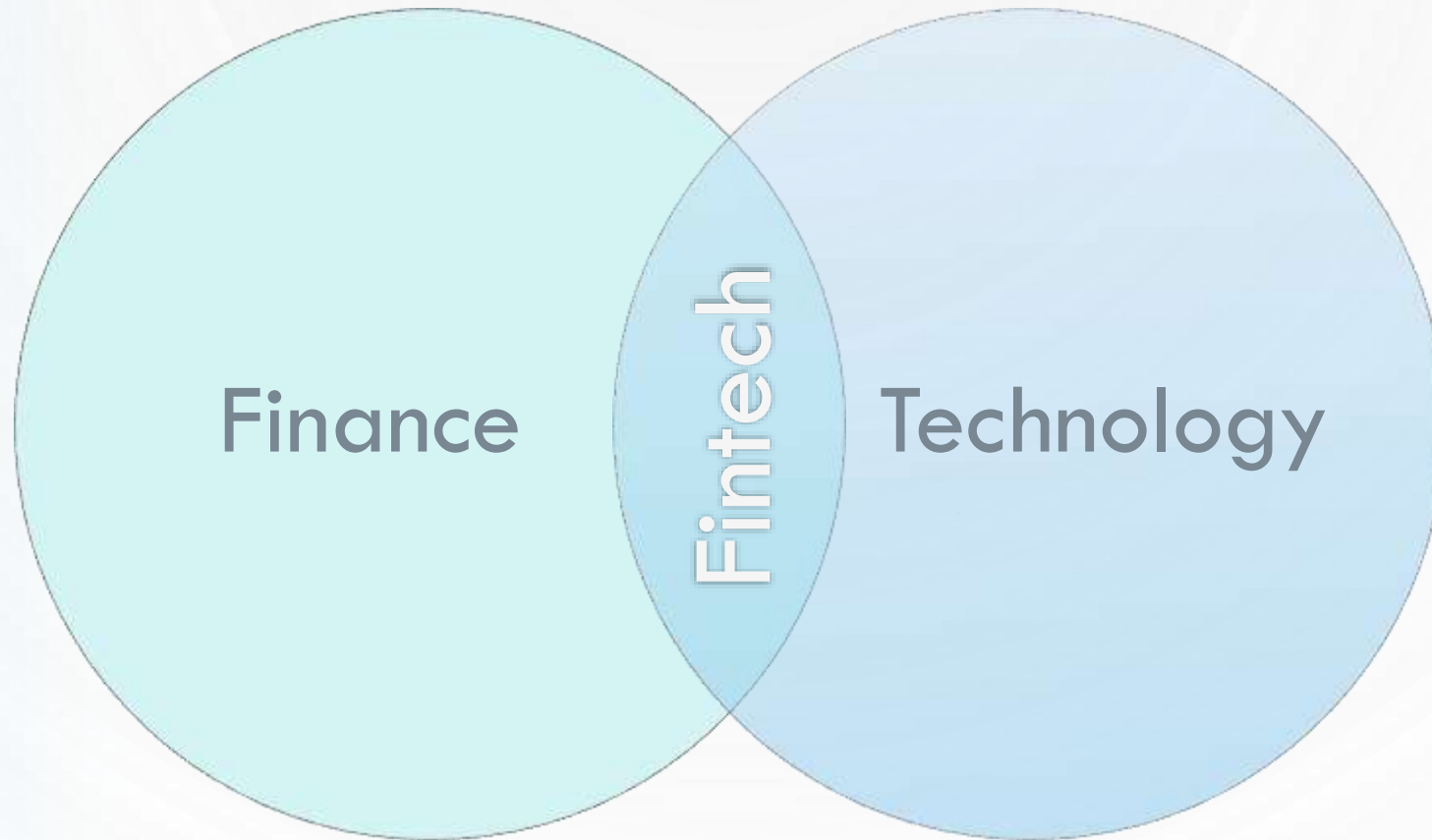




# WHAT IS FINTECH?

**fin·tech** 'fin,tɛk/ *noun*

Fintech companies are businesses that leverage new technology to create new and better financial services for both consumers and businesses.



The background features a light blue and white color scheme. On the left and right sides, there are stylized circuit board traces in a light blue color. In the center, there is a large, faint, circular pattern composed of many concentric, slightly irregular lines, resembling a ripple effect or a target. The main title is centered in a bold, dark blue, sans-serif font.

# HISTORY AND BANKING APPLICATIONS

BRAD JOHNSON



# THE EVOLUTION OF FINTECH

- 1865 – The pantelegraph is used to verify signatures in banking transactions between Paris and Lyon, France.
- 1918 – The Fedwire Funds Service is established by the Federal Reserve Banks to transfer funds and connect all 12 Reserve Banks by telegraph using Morse code.
- 1950 – Credit cards are introduced starting with Diners Club card.
- 1967 – Barclays bank introduces the world to the first automated teller machines (ATM), initially called a “robot cashier.”



1934 - IBM® 801 Bank Proof cash machine



1967 – ATM, aka “robot cashier”

# THE EVOLUTION OF FINTECH

- 1971 – The National Association of Securities Dealers Automated Quotations (NASDAQ) is established, introducing the era of all-electronic trading.
- 1982 – E-Trade, the first online brokerage, is established.
- 1997 – First mobile payment was realized by text message, buying a Coca-Cola from a vending machine in Finland.
- 1998 – Majority of U.S. banks establish their first transactional websites for Internet banking.



1971 – NASDAQ's all-electronic trading



1997 - First mobile payment

# THE EVOLUTION OF FINTECH

- 1998 – PayPal was funded under the name Confinity as a mobile payment platform for Palm Pilots and PDAs.
- 2009 – Version 0.1 of Bitcoin is released to the world.
- 2011 – Google launches Google Wallet, allowing consumers to use smartphones to make payments.
- 2014 – Apple launches Apple Pay.



1998 – PayPal



2008 – The mysterious Satoshi Nakamoto created the Bitcoin.



# THE EVOLUTION OF FINTECH

- 2015 – For the first time, more people use mobile banking than physical branches.
- 2016 – The first fintech bachelor program was created in Frankfurt, Germany.



2015 – Mobile banking surpasses physical

The screenshot shows the website for the Digital Innovation & Fintech BSc in Business Administration program at Frankfurt School. The page includes a navigation bar with icons for 'Login', 'DE', 'Search', and 'Menu'. The main content area features a table with program details and a photo of a smiling woman.

Abschluss	Sprache	Dienstleistung/Semester
Bachelor of Science (BSc)	DE/EN	6,800 Euro <small>inklusive Gebühren für das Hochschulstudium</small>
Bewertungsschritt	Studiengang	Dauer
31. Mai	Mitte August	7 Semester

Navigation links: [Studienfortschritte](#), [Zertifikate](#), [Lehrpläne](#), [Kooperationen](#), [Ausschreibung](#), [Praktikum](#), [Voraussetzungen](#), [Studiengänge](#), [Career Service](#), [Anfrage](#), [Formular](#)

**Was Sie erwartet**  
In sieben Semestern erlangen Sie profunde IT-Kenntnisse mit Ausrichtung auf digitale Technologien wie z.B. Appentwicklung. Gleichzeitig arbeiten Sie sich im Studium in relevante Themen aus Management und Wirtschaft ein.

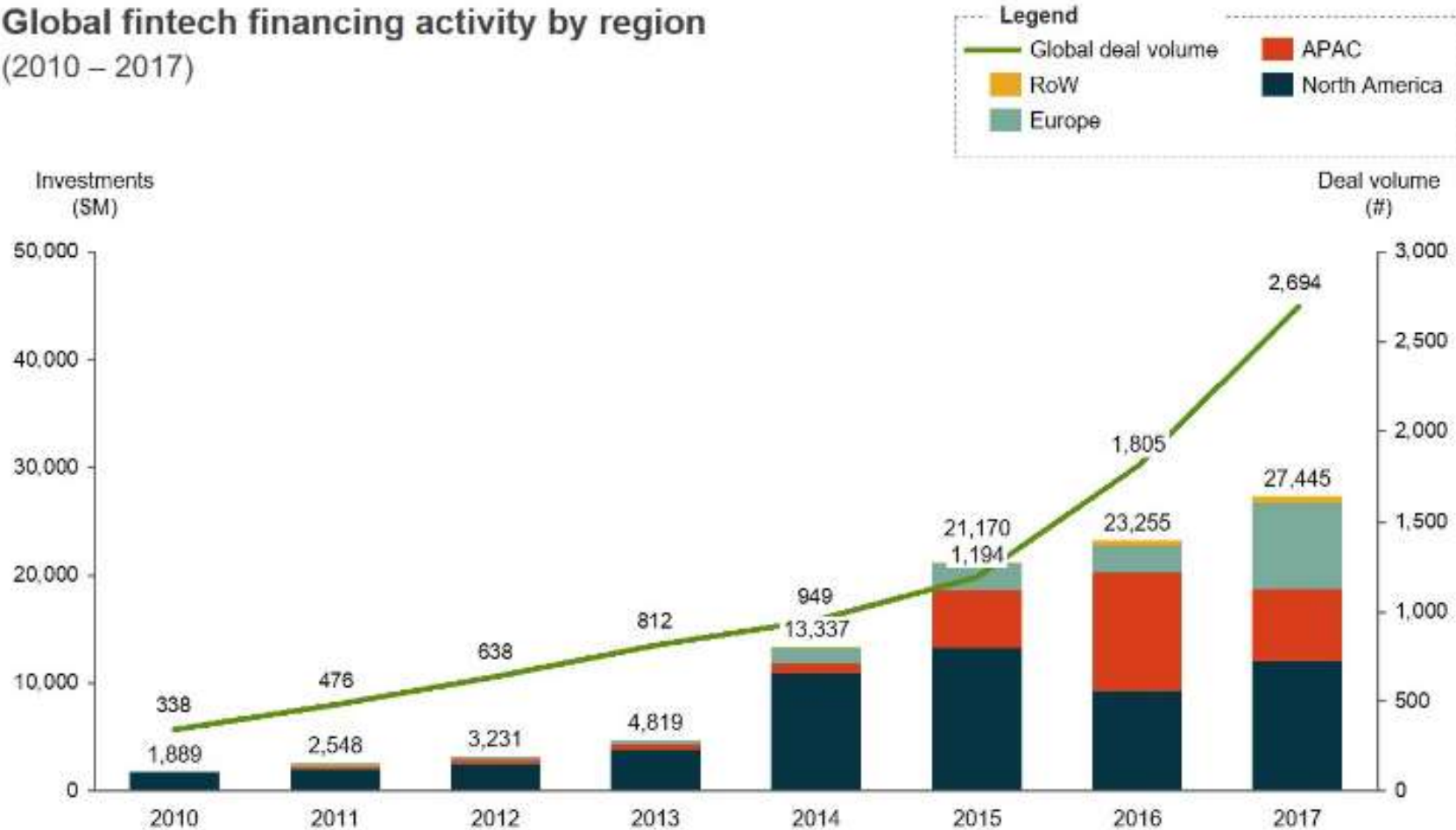
**Theorie trifft Praxis**  
Parallel zum Studium arbeiten Sie bei einem unserer Kooperationspartner, der Fintech Group AG oder der DZ Bank, wo Sie die Theorie in die Praxis umsetzen.

**Fragen?**  
Anrufen: 069-7664-333  
E-Mail: [kontakt@fhs.de](#)  
Hinterlassen Sie uns Ihre Nachricht (PDF)  
Bewertung: [Checklist \(PDF\)](#)

2016 – First fintech bachelor program

# Nearly US\$100 billion has flowed into fintech ventures since 2010.

**Global fintech financing activity by region**  
(2010 – 2017)

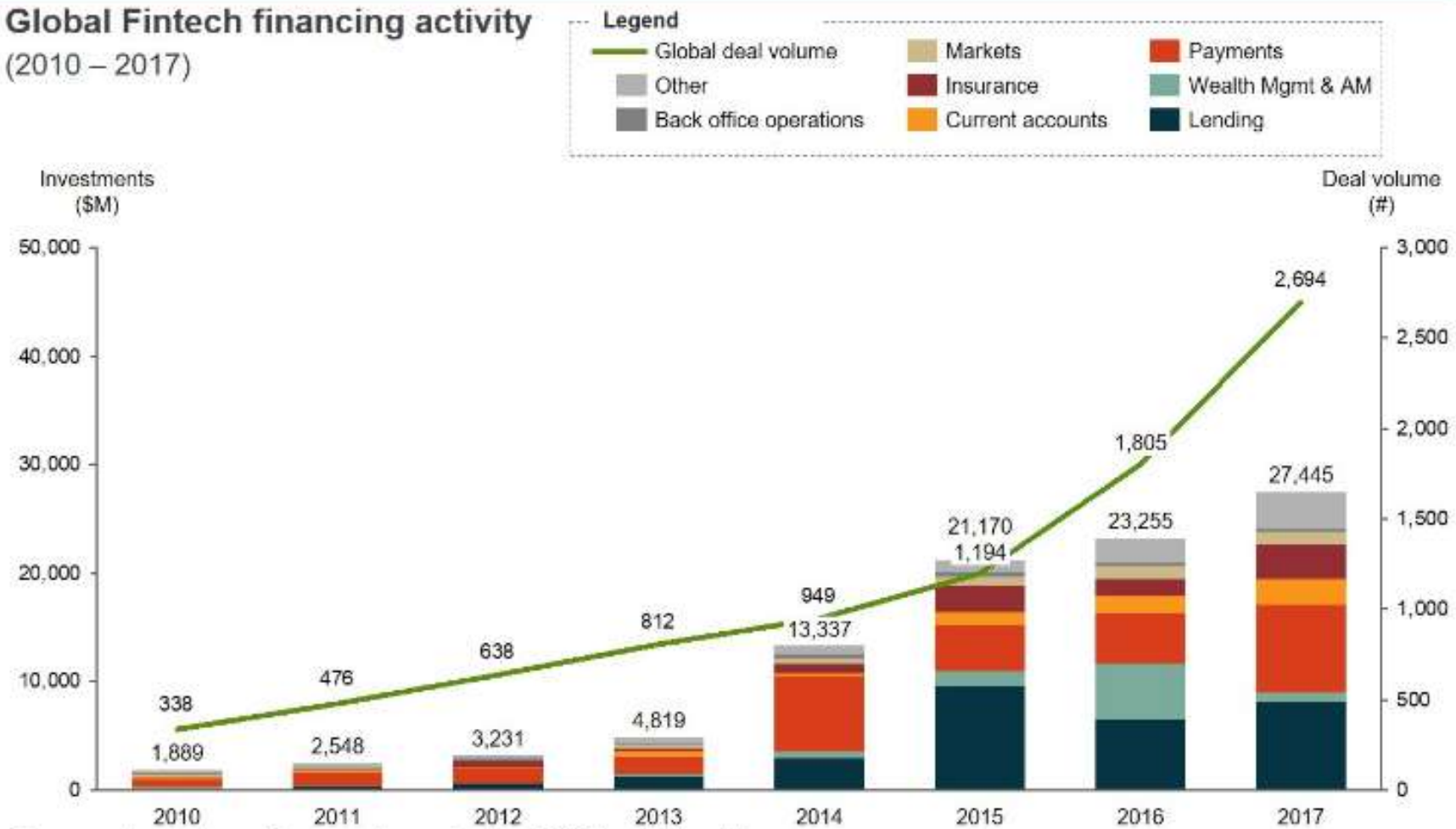


Source: Accenture Research analysis of CB Insights data

<https://newsroom.accenture.com/news/global-venture-capital-investment-in-fintech-industry-set-record-in-2017-driven-by-surge-in-india-us-and-uk-accenture-analysis-finds.htm>

# Most fintech investments went to lending, payments and insurance technologies in 2017.

## Global Fintech financing activity (2010 – 2017)



Source: Accenture Research analysis of CB Insights data

<https://newsroom.accenture.com/news/global-venture-capital-investment-in-fintech-industry-set-record-in-2017-driven-by-surge-in-india-us-and-uk-accenture-analysis-finds.htm>



# INDUSTRY DISRUPTOR – EXAMPLE

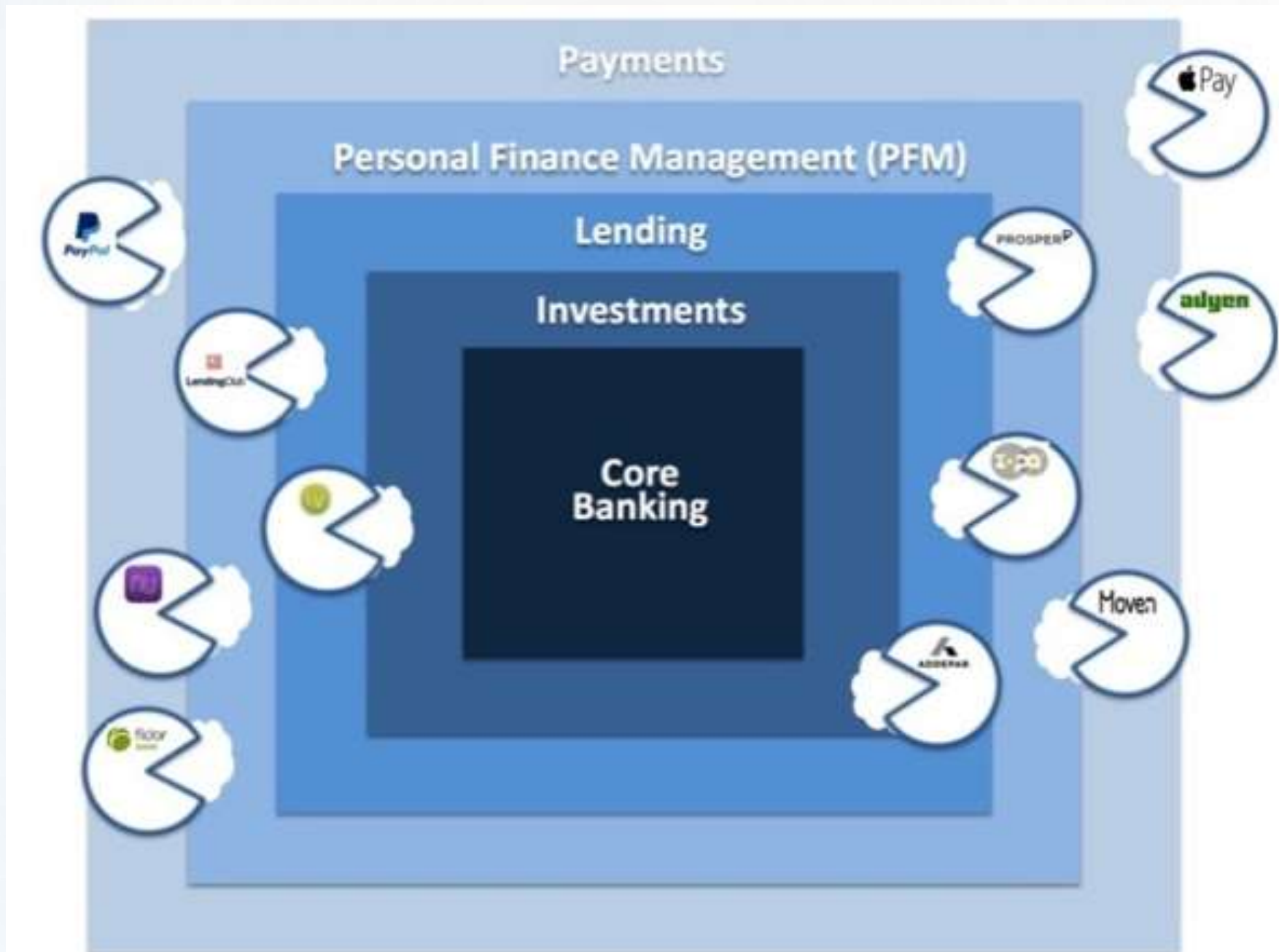
- Bank drafts then ...



- Bank drafts now ...



*Disclaimer: Inclusion on this slide does not constitute endorsement by DFI.*



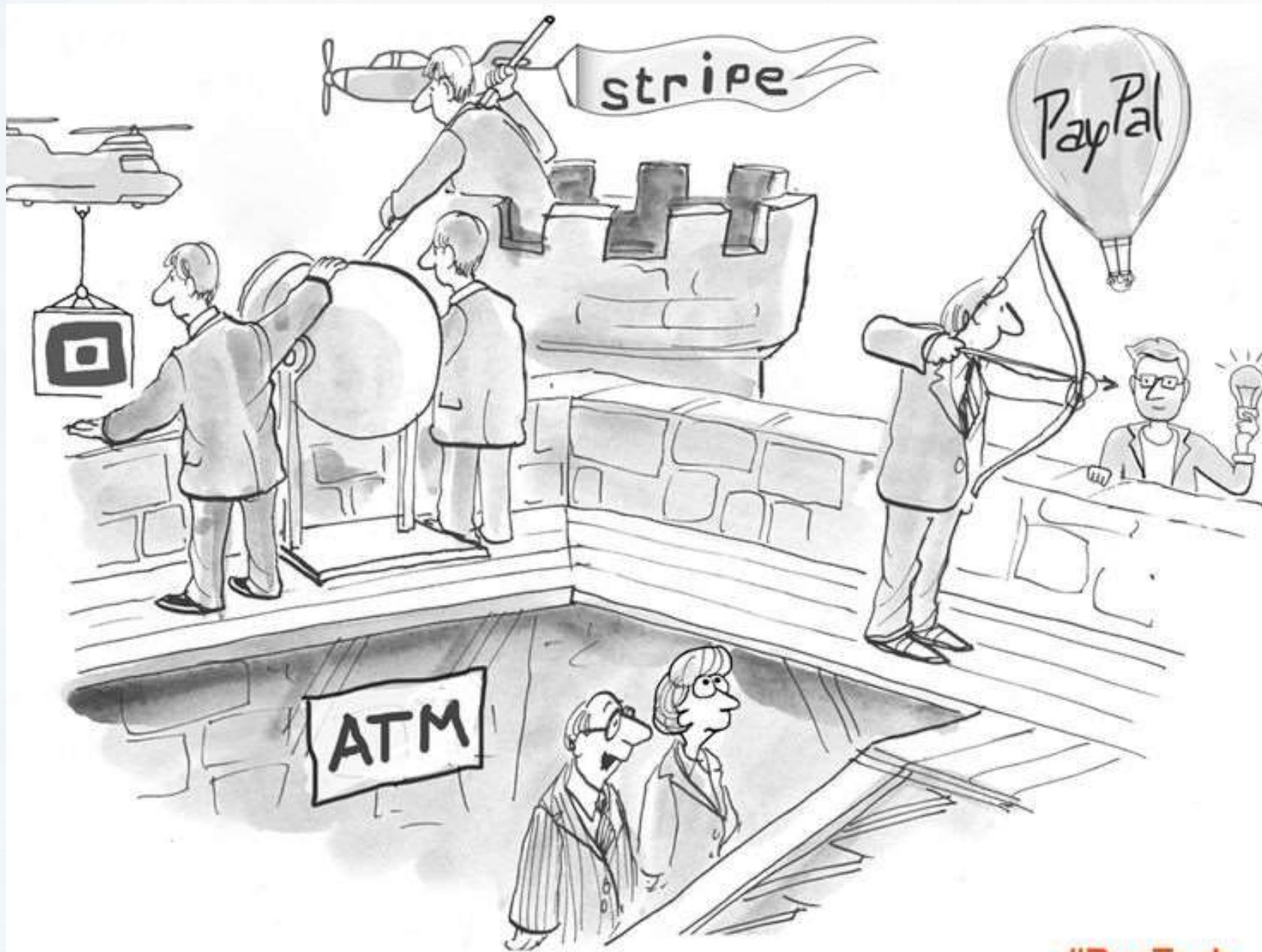
*Disclaimer: Inclusion on this slide does not constitute endorsement by DFI.*



Tom Loverro, Up & Right, November 16, 2014. Accessed November 7, 2017. Available at: <http://tomloverro.com/day/2014/11/16>.

Disclaimer: Inclusion on this slide does not constitute endorsement by DFI.





**“We’re doing all we can to hold back the competition.”**

**#RegTech**  
**@trulioo**

# REGULATORY SANDBOX





The background features a light blue and white color scheme. On the left and right sides, there are stylized circuit board traces in a light blue color. In the center, there is a large, faint, circular graphic composed of concentric rings, resembling a target or a lens. The main title and author name are centered over this background.

# LENDING APPLICATIONS

CHAD HARLAN

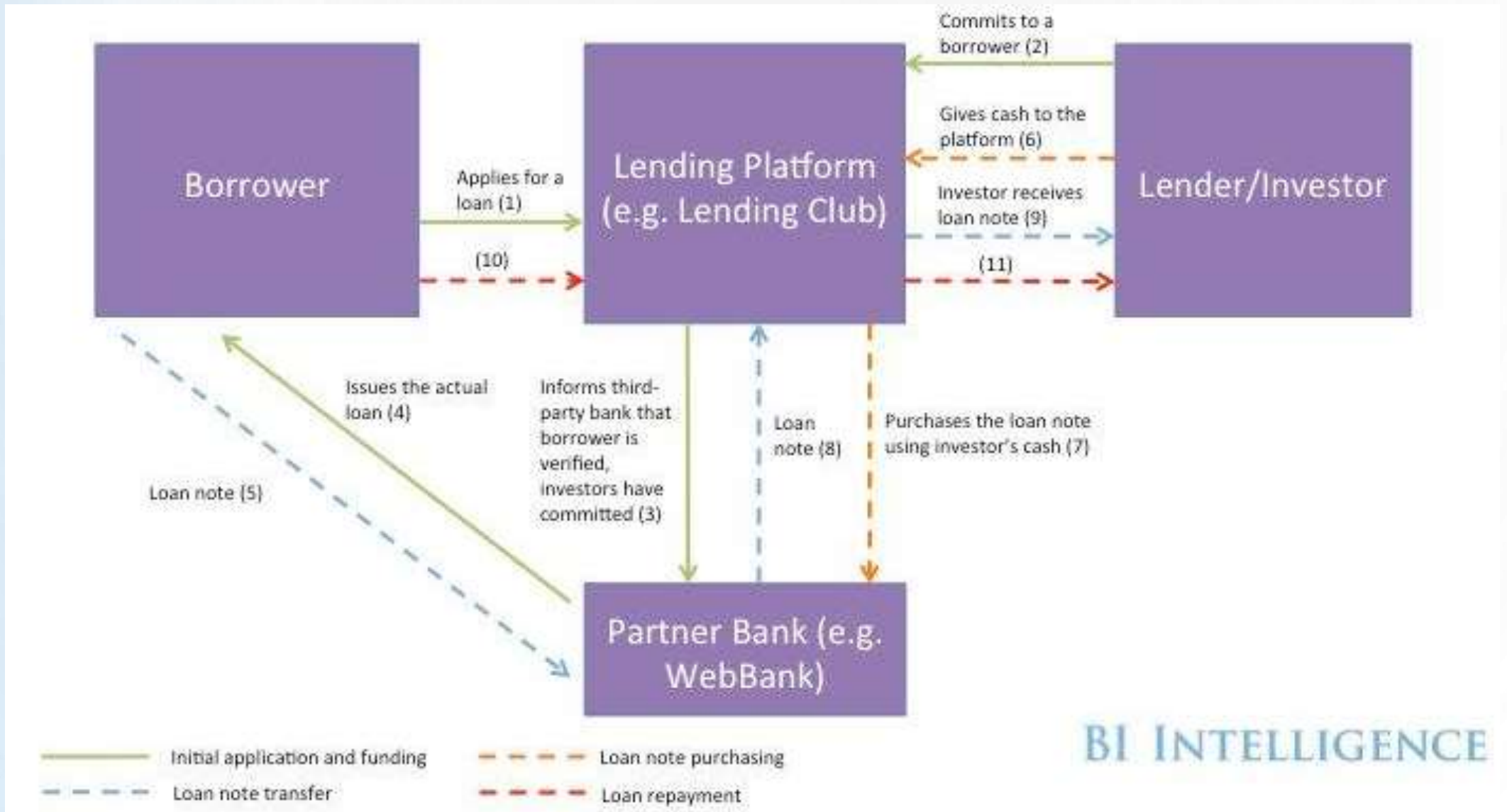


# NONDEPOSITORY PRODUCTS

## DFI REGULATES:

- Mortgage loans
- Consumer and industrial loans
- Payday loans
- Wire transfers

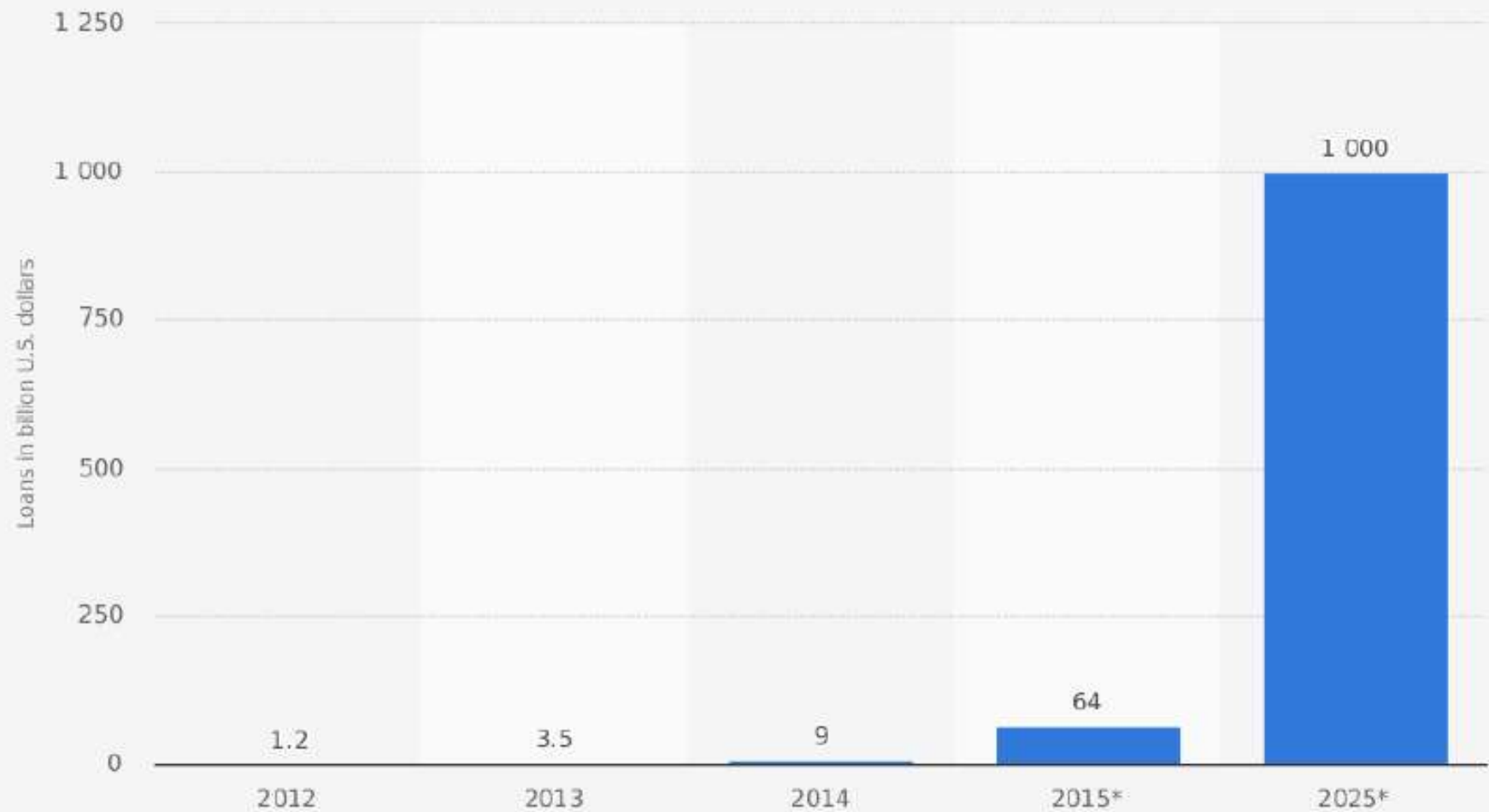
# HOW PEER-TO-PEER LENDING WORKS\*



BI INTELLIGENCE

\*This is a simplified graphic showing how a loan is processed through a peer-to-peer marketplace - revenue sources such as fees are not included.

## Value of global peer to peer lending from 2012 to 2025 (in billion U.S. dollars)



Source  
Nunatak  
© Statista 2018

Additional Information:  
Worldwide; Nunatak; 2012 to 2014

# MORTGAGE APPLICATIONS



*Disclaimer: Inclusion on this slide does not constitute endorsement by DFI.*

# CYBERCURRENCY

- Transferring money online



*Disclaimer: Inclusion on this slide does not constitute endorsement by DFI.*

## TRIBAL LENDERS

The logo for Great Plains Lending features a stylized green swoosh above the text "Great Plains Lending".

Great Plains Lending

The logo for spotloan consists of a circular icon with a blue center and an orange outer ring, followed by the text "spotloan" in blue.

spotloan

The logo for Ameriloan features the word "Ameriloan" in a green-to-blue gradient font, enclosed in a black rectangular border.

Ameriloan

The logo for plain green features the word "plain" in black and "green" in white inside a green speech bubble shape.

plain green

The logo for MOBILOANS features the word "MOBILOANS" in purple, with a green graduation cap icon above the letter "O" and a dashed line leading to it.

MOBILOANS

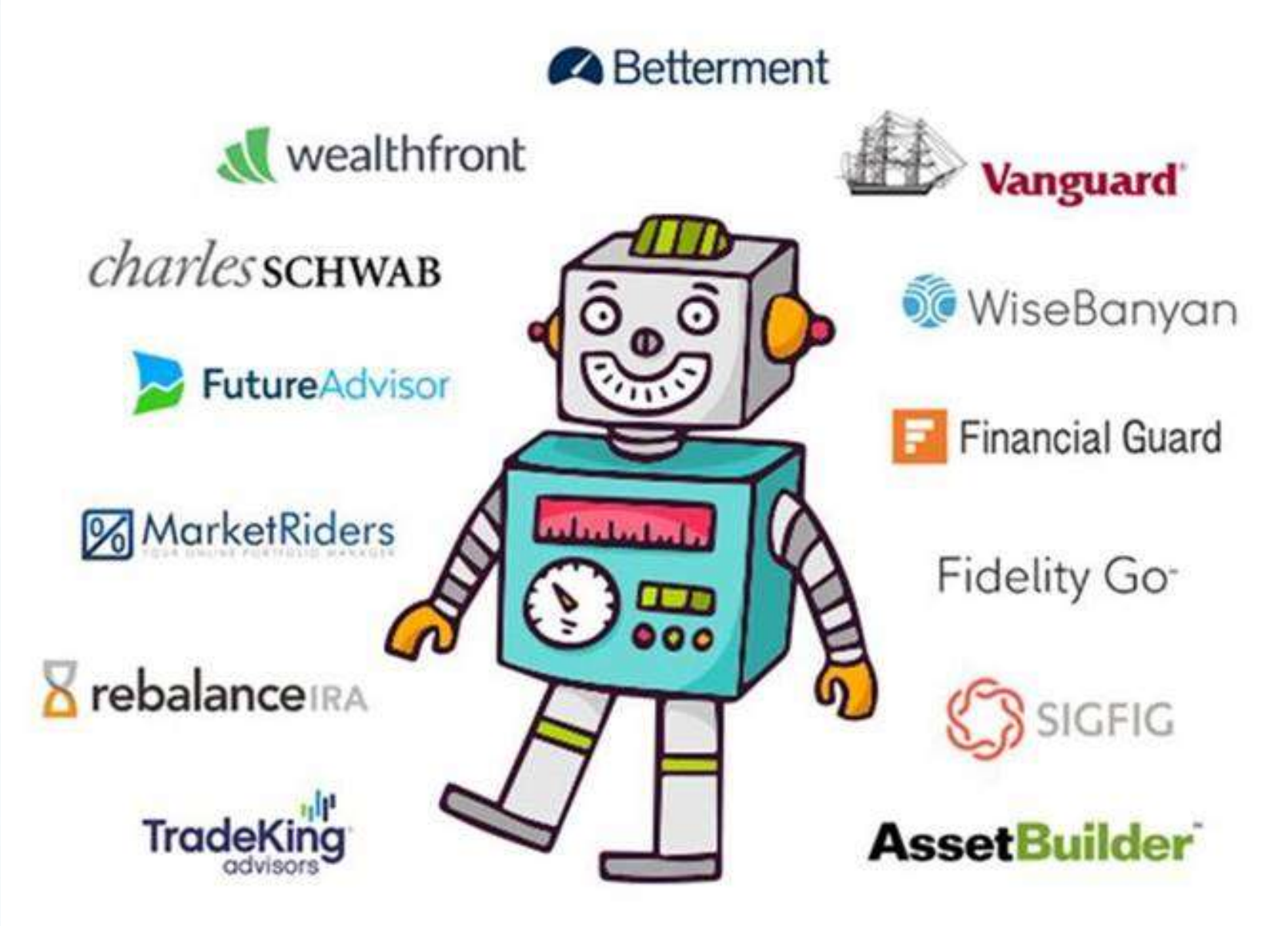
*Disclaimer: Inclusion on this slide does not constitute endorsement by DFI.*



The background features a light blue and white color scheme. On the left side, there are vertical lines of varying heights, some ending in small circles, resembling a circuit board or data stream. In the center, there is a large, faint, circular pattern of concentric lines, similar to a target or a lens flare. The overall aesthetic is clean and modern, with a focus on technology and data.

# ROBO ADVISERS

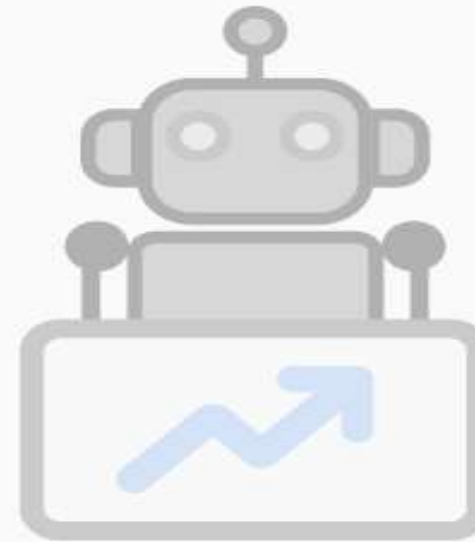
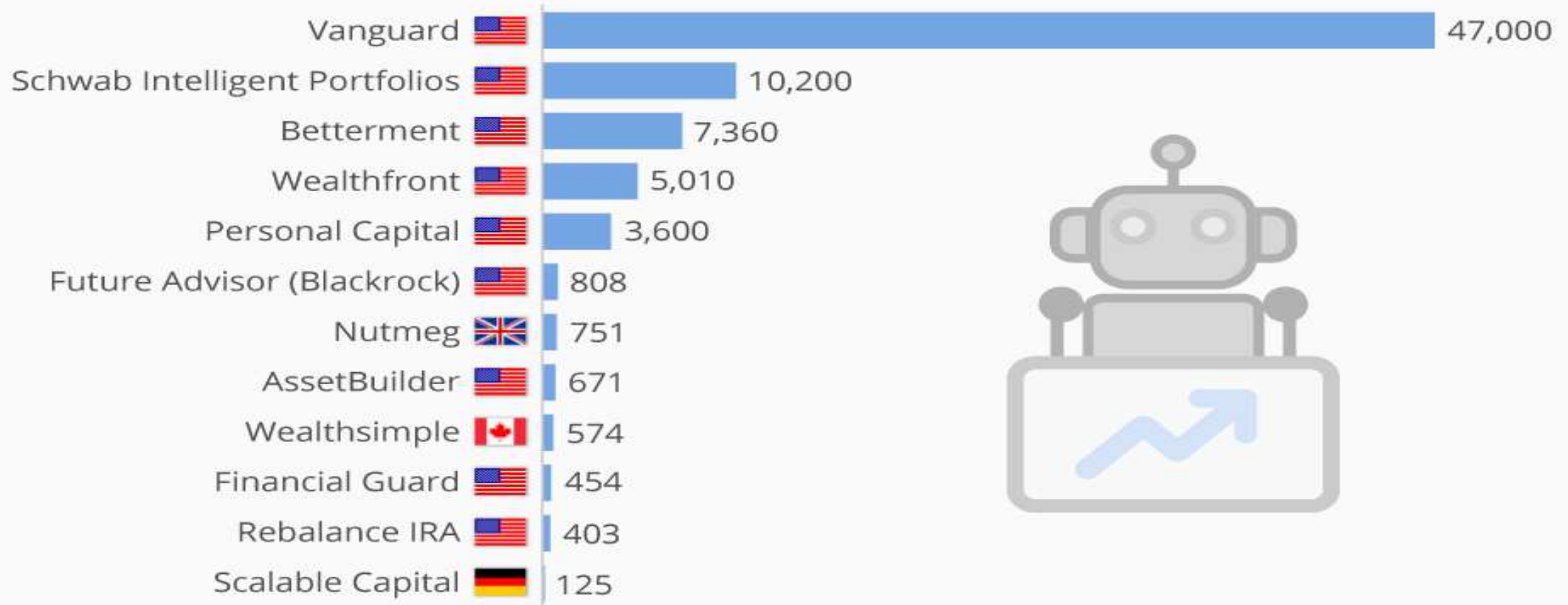
CHAD HARLAN



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# America Is The Realm Of The Robo-Advisor

Top Robo-Advisors by assets under management (in million U.S. dollars)



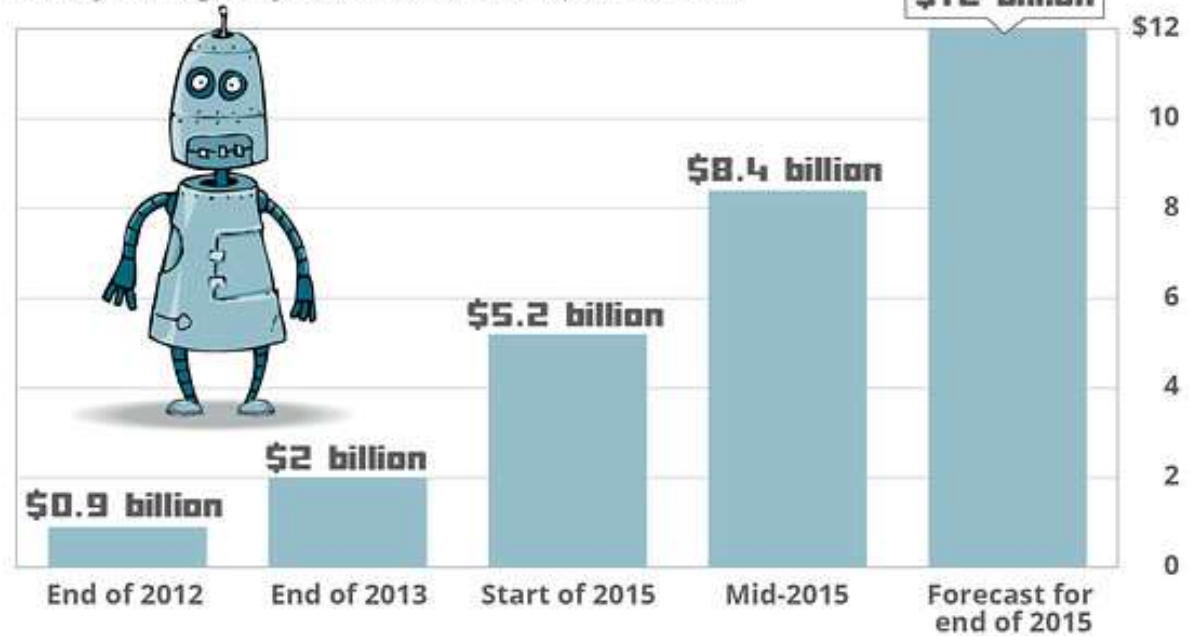
Information based on latest available data, as of February 2017.  
We do not claim completeness of the information given

Sources: Statista estimates based on company information,  
Press Releases, Graphiq, Nerdwallet, CNBC, Business Insider

# HOW BIG WILL IT BE?

## More investors hand their money to robots

Money managed by robo-advisor startups, in billions



Source: Aite Group, a research and advisory firm

November  
2015

Robo-advisors could be managing  
as much as \$2.2 trillion by 2020



October  
2016

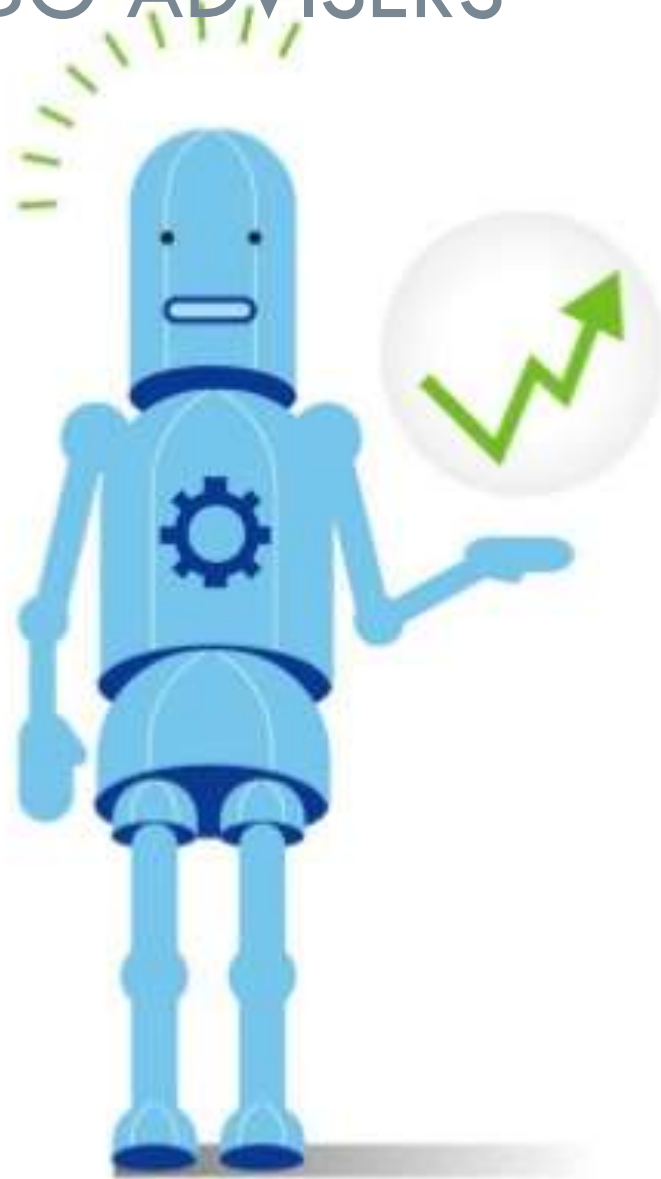
SOURCE: Bloomberg, Investor Junkie

visualcapitalist.com





# ROBO ADVISERS



## How they work?

Assess a person's income and find out: how much they can afford, how much they need to save, study the best tax structure and decide what investments should be made to realize those objectives. Intelligent algorithms can now do that.

Investment?



Risk?



Goal?



Time?

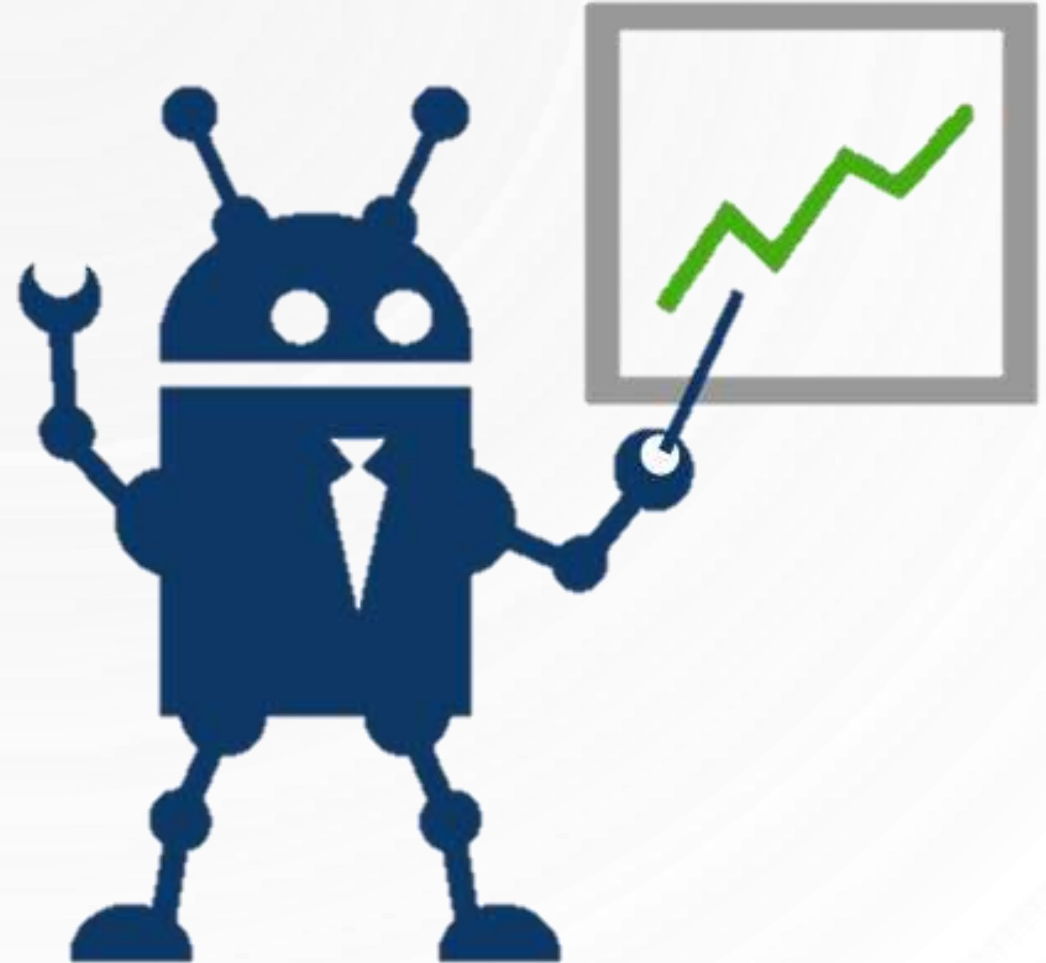


- ✔ The answers are analyzed and the algorithms are processed, thus designing a tailored investment plan.
- ✔ Users can adjust their goal and risk tolerance as they prefer.
- ✔ Thanks to automation, an automated robot can charge lower fees.



# PROS OF ROBO ADVISERS

- Algorithms (“unbiased” advice)
- Low/no minimum investment required
- Low fees
- Transparency
- Customized solutions
- Online tracking



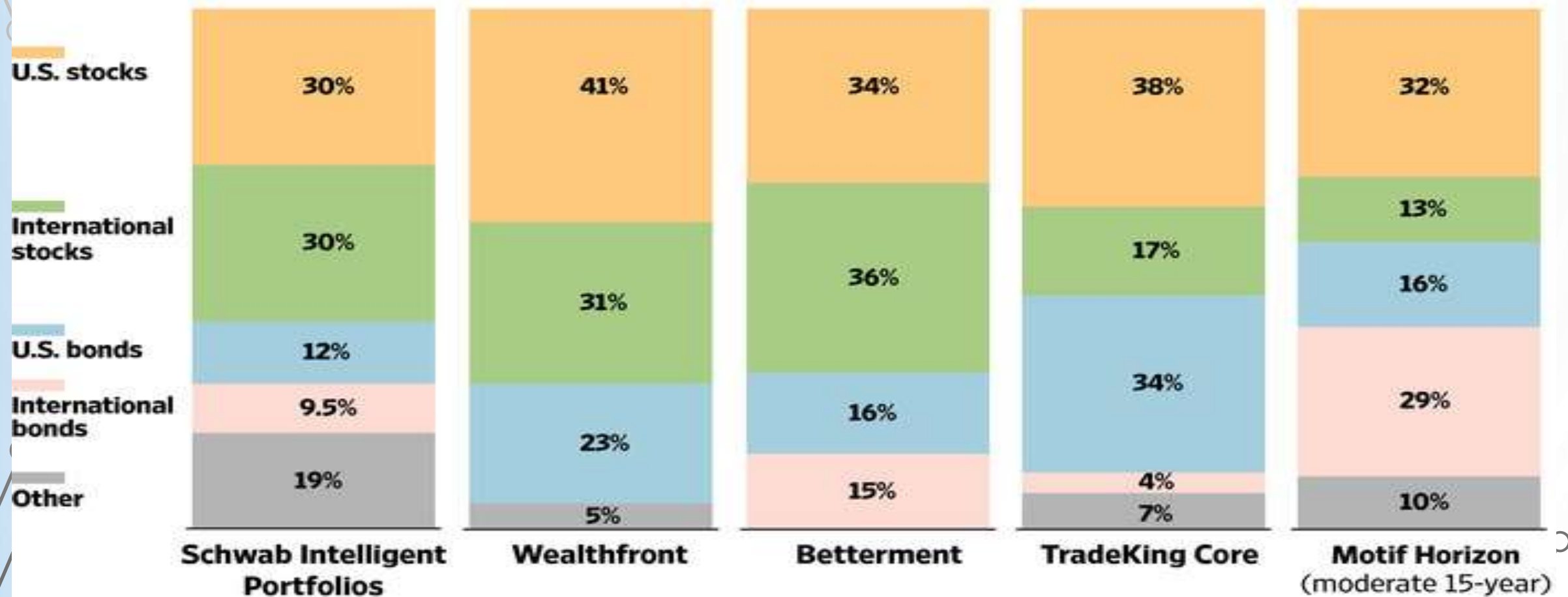


# CONS OF ROBO ADVISERS

- Not personalized
- Fees may not be lower
- No relationship (face-to-face/office)
- Could invest too little
- Limited account options

## Different Strokes For the Same Folks

With robo-advisor services, investors can get diversified, low-cost portfolios, most commonly made up of exchange-traded funds. But the suggested holdings can vary significantly among the firms. Here are asset-class mixes recommended by five firms for an investor with a moderate risk profile.



Note: For a full list of each firm's recommended exchange-traded funds, look for the related story at [blogs.wsj.com/totalreturn/](https://blogs.wsj.com/totalreturn/).

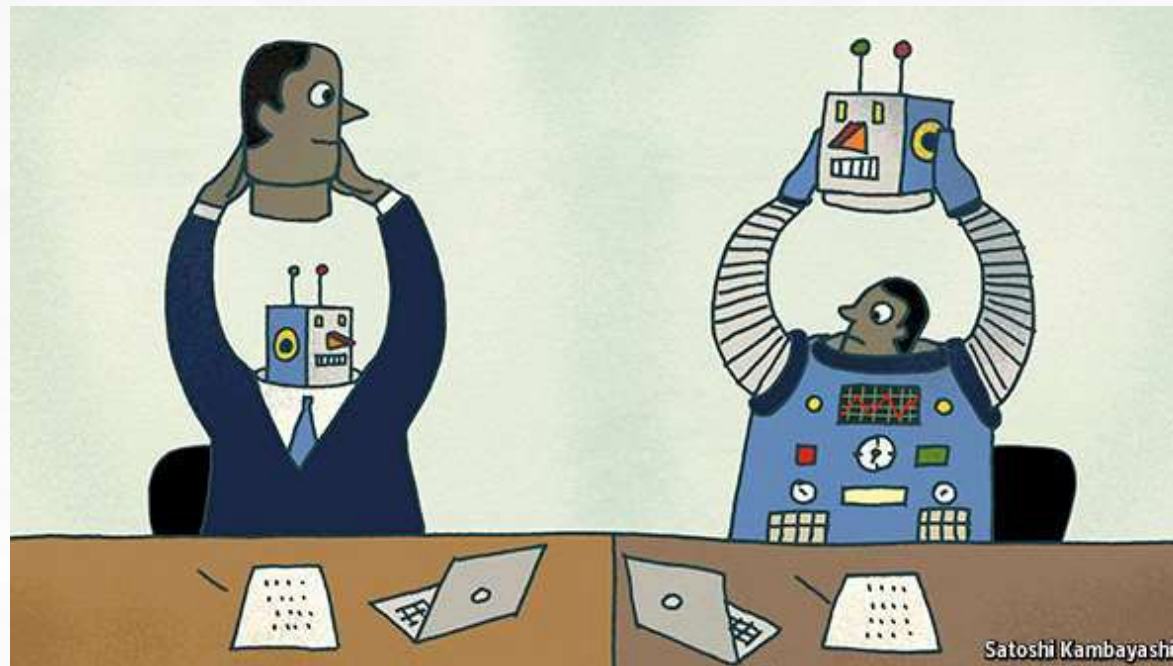
Source: the companies

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THE WALL STREET JOURNAL.



"I figure if we can't beat the robo-advisers..."



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# BLOCKCHAIN, CRYPTOCURRENCY AND ICOS

ANTHONY MCKINNEY





*Disclaimer: Inclusion on this slide does not constitute endorsement by DFI.*


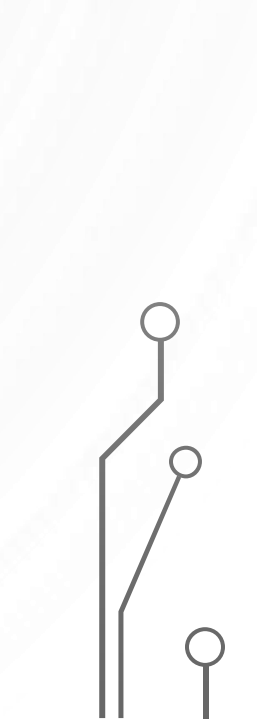
# WHAT IS BITCOIN?

- Bitcoin is a digital cryptocurrency that utilizes distributed ledger technology to record transactions in a blockchain.
- <https://blockchain.info>





# DIGITAL CURRENCY V. FIAT CURRENCY

- Not issued by national government
  - Not backed by a bank or government
  - Not “legal tender”
  - Decentralized v. Centralized
- 
- 



# BLOCKCHAIN

Blockchain is...

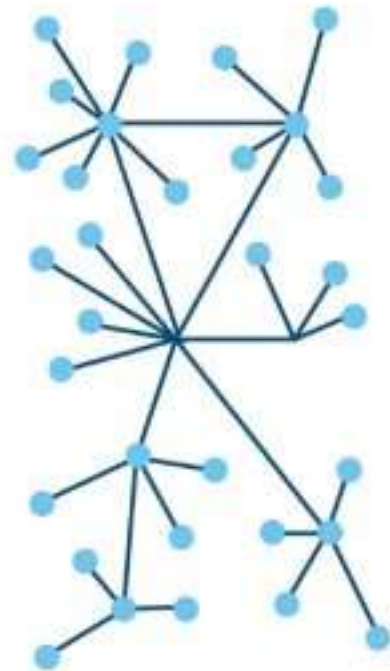
- A big file
- Stored on many computers
- Managed by software which uses cryptography to secure the data in the file.



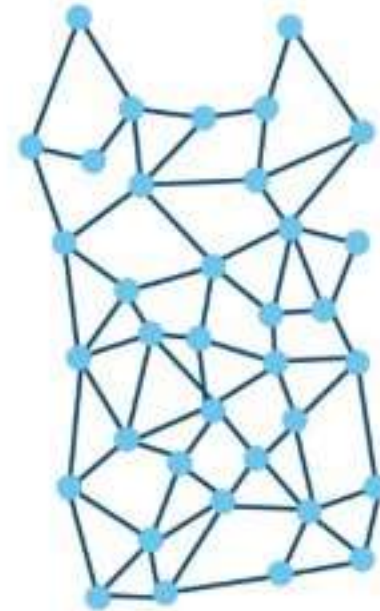
# DISTRIBUTED LEDGER TECHNOLOGY



**Centralized**

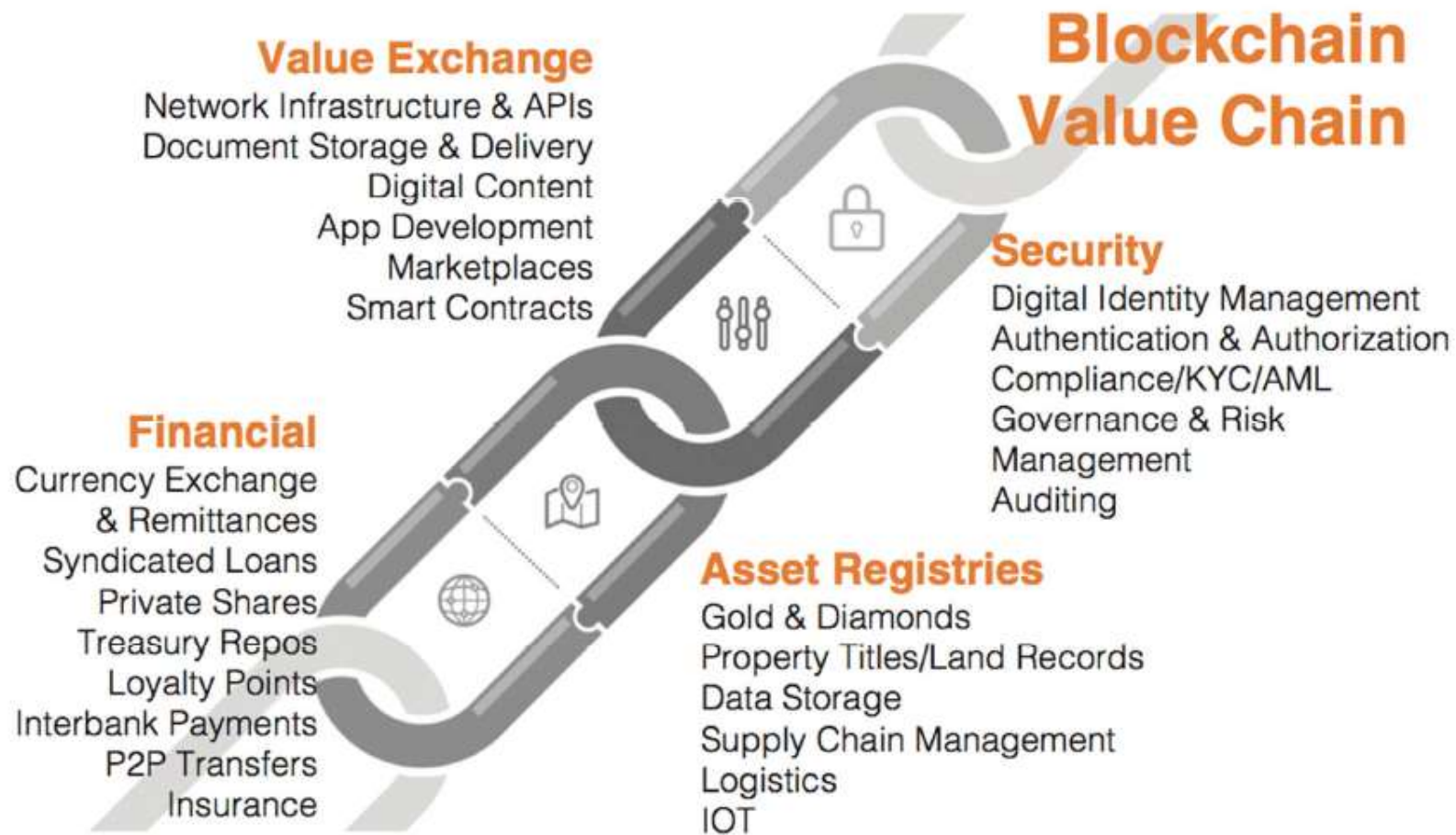


**Decentralized**



**Distributed**

# BLOCKCHAIN UTILITY



# USES OF CRYPTOCURRENCY

## THEORETICAL USES:

- Buying Mundane Goods & Services
- Donating to Charity
- International Transactions

## ACTUAL (CURRENT) USES

- Money Laundering
- Purchasing Illegal Goods
- Ransomware
- Speculation





<http://coinmarketcap.com>



[https://people.hofstra.edu/geotrans/eng/ch7en/conc7en/stages\\_in\\_a\\_bubble.html](https://people.hofstra.edu/geotrans/eng/ch7en/conc7en/stages_in_a_bubble.html)

# SMART CONTRACTS

1



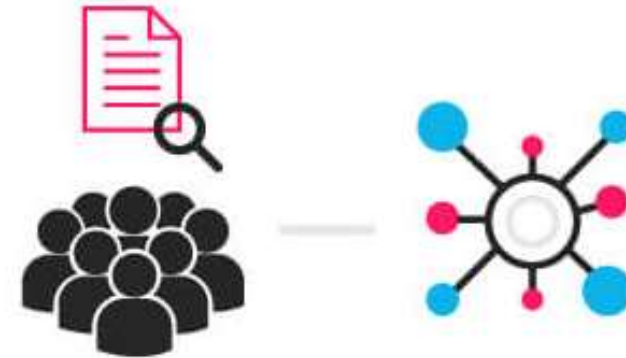
An option contract between parties is written as code into the blockchain. The individuals involved are anonymous, but the contract is the public ledger.

2



A triggering event like an expiration date and strike price is hit and the contract executes itself according to the coded terms.

3



Regulators can use the blockchain to understand the activity in the market while maintaining the privacy of individual actors' positions

# INITIAL COIN OFFERINGS (ICOS)



---

**Get in the Know  
About ICOs**

---

Initial Coin Offerings



IS IT REAL?

HOWEYCOINS

[ABOUT](#) [INVESTMENT LADDER](#) [MEET THE TEAM](#) [TESTIMONIALS](#) [CONTACT](#)

# PRE-ICO SALE IS LIVE

**15% BONUS ENDS IN**

**14 : 22 : 26 : 35**

Day(s)

Hours(s)

Minute(s)

Second(s)

**TOKEN SALE!**




























[Learn More](#)

The background features a central pattern of concentric, slightly irregular circles in shades of light blue and grey, creating a ripple effect. This is overlaid with a network of thin, dark grey lines that resemble a circuit board or a neural network, with small circles at various points where lines intersect or terminate. The overall aesthetic is clean, modern, and technological.

# CONCLUSION

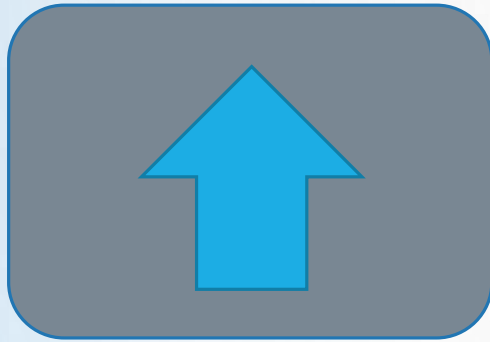
KELLY MAY

# FINTECH IS EVERYWHERE

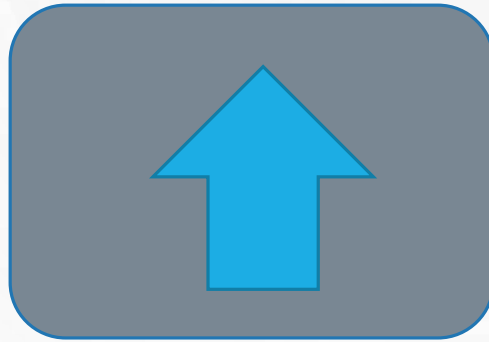
 Transportation	 Products & Apparel	 Hospitality	 Banking	 Labor	 Education & Skill	 Office Rental
 Sidecar	 NeighborGoods	 airbnb	 KICKSTARTER	 Upwork™	 coursera	 LIQUIDSPACE
 lyft	 Addresses	 cleartrip	 LendingClub	 TaskRabbit	 Udemy	 Regus
	 artsicle	 Home Exchange	 ZOPA	 Zaarly	 Chegg	 TECHSPACE

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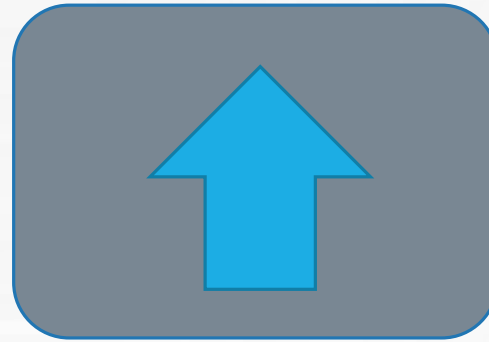
# WHAT DOES IT ALL MEAN?



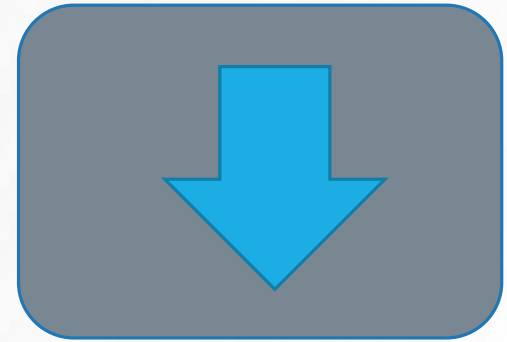
Regulatory  
Innovation



Cybersecurity  
Awareness



Risk



Privacy

Unknowns: Market Upheaval? Fraud?



# DFI TEACHER RESOURCES

- <http://kfi.ky.gov/public/Pages/teacher.aspx>
- Stopping Cybercrime
  - Student workbooks
  - PowerPoint with teacher notes
  - Classroom activities
  - Handout with additional resources and activities
- Basics of Saving and Investing: Investor Education 2020
  - Entire curriculum – print what you want!
  - Learning objectives, activities, handouts and worksheets



# TEACHER RESOURCES

- <http://nextgenpersonalfinance.org/>
- Next Gen Personal Finance
  - Budgeting Apps Project
  - Online Tools and Apps Project
  - Person-to-Person Payments Activity
  - Robo Adviser Activity
  - Apps The Force Us to Save Activity
  - Let's Go Bitcoin-ing Number Chug
  - Why Bitcoin Will Bust Student Handout

## Select Resources Relating to Fintech



### Money Apps

- [Budgeting Apps \[NGPF Project\]](#)
  - In this Common Core Standards-aligned project, students will explore the ever-evolving line of online and mobile budgeting tools available to help them understand their spending.
- [Online Tools and Apps \[NGPF Project\]](#)
  - In this Common Core Standards-aligned project, students will explore the ever-evolving line of online and mobile finance tools available to supplement their banking.

### Mobile Payments

#### Reference:

- [The State of Gen Z 2017 \(Center for Generational Kinetics\)](#)
- [Article About Venmo Payment App \(The New York Times\)](#)

#### Resource:

- [Explore Person-to-Person Payments \[NGPF Activity\]](#)
  - In this activity, students will be able to: Learn how P2P payments work and who uses them.

### Robo Advisers

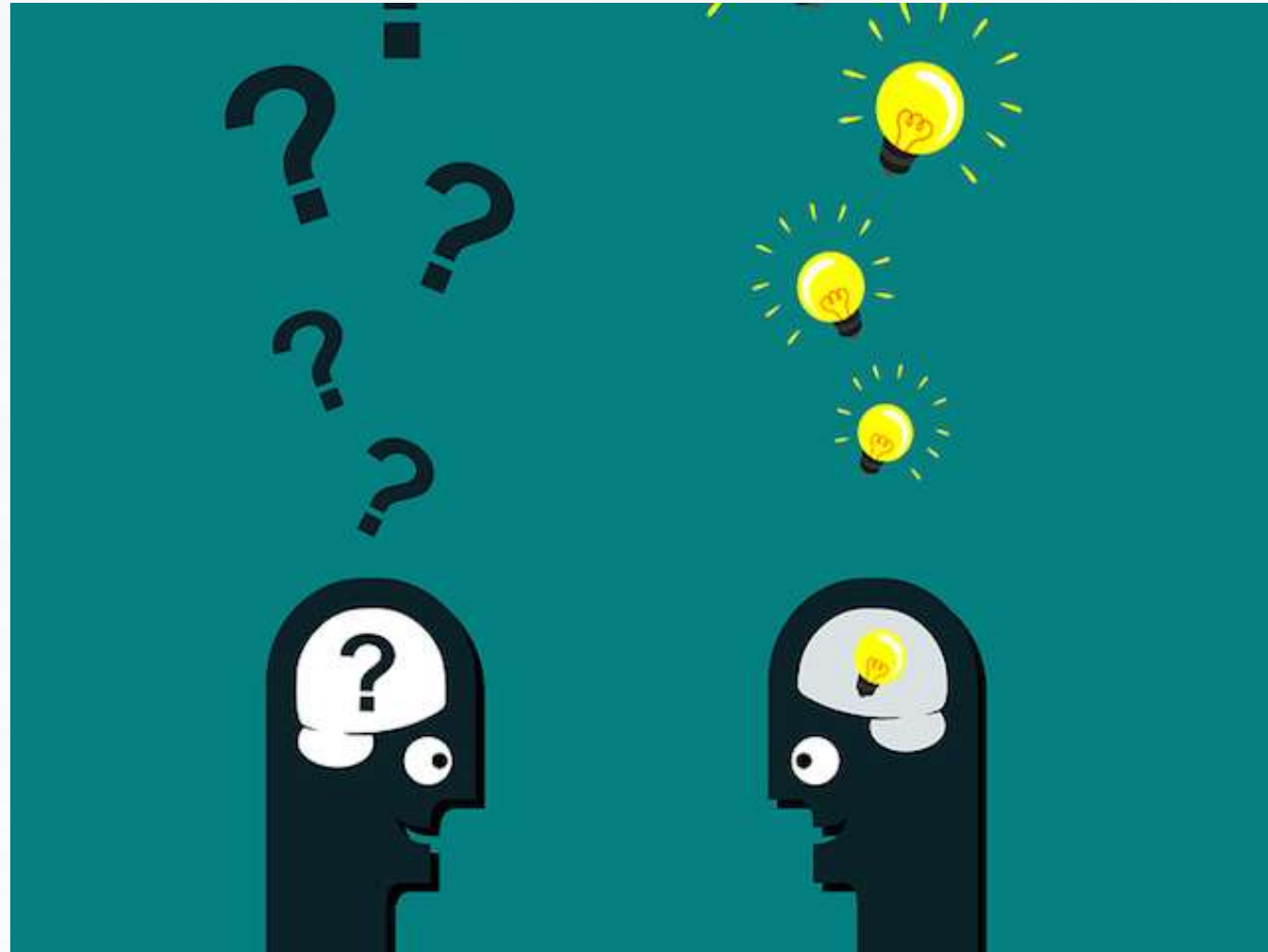
#### Reference:

- [The Pros and Cons of 'Spare Change' Investment Apps \(Money Under 30\)](#)
- [Young, Tech-Savvy Investors Entrusting Their Portfolios to 'Robo Advisers' \(2014\)](#)
  - A new generation of investors is relying on algorithms instead of brokers to manage portfolios. Yahoo Finance (news interview) 00:03:05

#### Resources:

- [INTERACTIVE: Would You Trust a Robot to Make Investment Decisions? \[NGPF Activity\]](#)
  - In this activity, students will be able to:
    - Assess the advantages and disadvantages of using robo-advising to invest.
    - Determine whether the portfolio chosen for them fits their needs.
    - Discuss whether they would use robo-investing in their own life.
- [Apps That Force Us to Save \[NGPF Activity\]](#)
  - In this activity, students will be able to: Conduct online research on a variety of mobile apps.

QUESTIONS?



# CONTACT INFORMATION

**DFI**

*Department of Financial Institutions*

**<http://kfi.ky.gov>**

**800-223-2579**



(Cryptomaniacs)





YouTube

hodlgang



Chris Record - HODL GANG - Bitcoin Rap Gucci Gang Remix Parody #hodlgang

592,744 views



13K



555



SHARE



...

<https://www.youtube.com/watch?v=JZYzoQQ6LJQ&list=PLF4EFYIOtZQf72hkeoY5wzfkytLXjJstx>